TYPES OF DROUGHT

Current drought literature commonly distinguishes between five categories of drought, all of which define drought in simplified terms:

1. Agricultural drought, defined by soil moisture deficiencies and impacts on crops,
2. Hydrological drought, defined by declining surface and groundwater supplies,
3. Meteorological drought, defined by precipitation deficiencies,
4. Hydrological and land use drought, defined as a drought in one area that has impacts in another one, i.e. a drought in the Rocky Mountains may be significant in Missouri because the amount of water in the Missouri River is in part dependent upon upstream precipitation, and
5. Socioeconomic drought, defined as drought impacting supply and demand of some economic commodity.

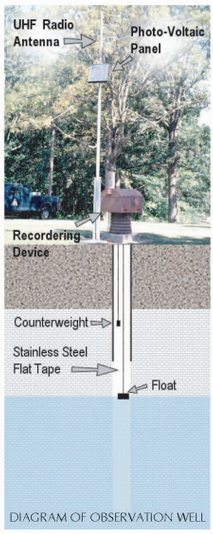
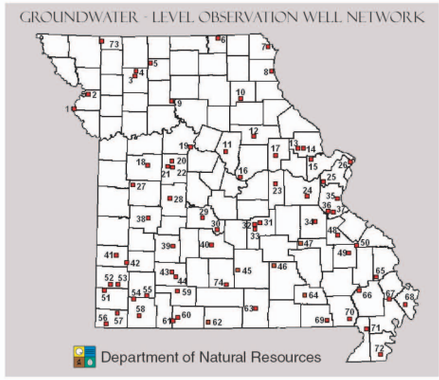
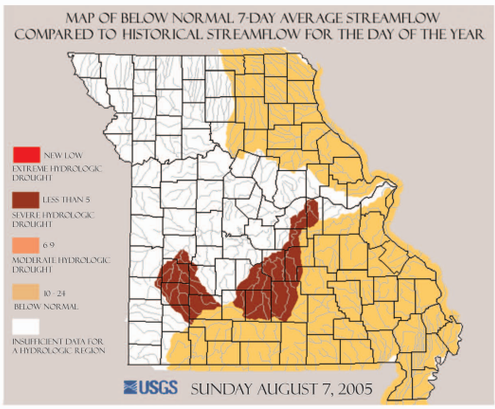
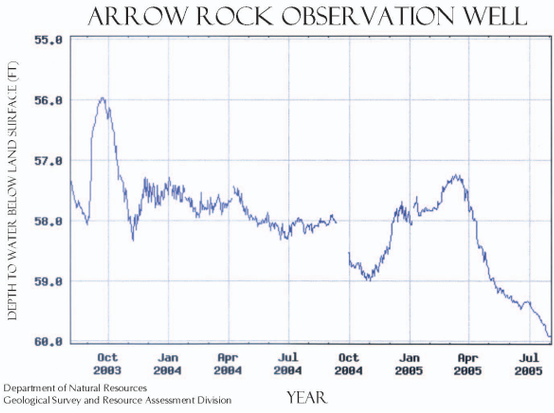


DIAGRAM OF OBSERVATION WELL



Nearly 80 percent of Missouri's public water suppliers use groundwater drawn from more than a dozen major aquifers. The department's Groundwater-Level Observation Well Network consists of 75 wells across Missouri that send real-time data via satellite to track these water levels.





Department of Natural Resources
Geological Survey and Resource Assessment Division

ASSESSMENT TOOLS

The current drought is categorized as an agricultural drought.

The Missouri Drought Plan relies on accurate assessments utilizing indicators such as the Palmer Drought Severity Index and the Crop Moisture Index.

The Palmer Index, the single-most widely used indicator, measures the departure of water supply (in terms of precipitation and stored soil moisture) from demand (the amount of water required to replace soil moisture and keep rivers, lakes and reservoirs at normal levels). The Crop Moisture Index uses meteorological approaches to monitor week-to-week crop conditions. It is based upon the mean temperature and total precipitation for each week within a climate region.

Additional assessment tools include the weekly U.S. Drought Monitor, county precipitation maps that indicate departure from the norm and the department's monthly rainfall maps. Supplemental factors include water demand versus supplies available, reductions in stream flow, declining reservoir levels, precipitation deficits, falling water levels in wells and soil moisture.

While the inability to make reliable long-term weather forecasts prevents the accurate predicting of the onset or end of drought, responsible use of a combination of techniques and tools can provide a means by which planners can gauge the severity of drought, and respond to the problem at hand.